

**REMARKS**

Claims 1-7, 9-16, and 38-50 are pending in this application. By this Amendment, claims 1 and 9 are amended and claim 8 is canceled, withdrawn claims 17-36 are canceled without prejudice to or disclaimer of the subject matter contained therein, and new claims 38-50 are added. No new matter is added.

Applicants appreciate the courtesies shown to Applicants' representative by Examiner Staicovici in the February 24 personal interview. Applicants' separate record of the substance of the interview is incorporated into the following remarks.

In the Office Action, claims 1-2, 8-9 and 12-16 are rejected under 35 U.S.C. §102(a) over WO98/35809. This rejection is respectfully traversed.

As discussed during the February 24 personal interview, WO98/35809 is directed to a method of toothbrush manufacture using a conventional two-component manufacturing process (Page 5, lines 4-11) involving a plastics material and an elastomer. One of ordinary skill in the art would recognize that such conventional methods and materials resulted in "chemical bonding." That is, this art suffers from the same problem identified in Applicants' specification in paragraph [0002].

As requested by Examiner Staicovici, Applicants again clarify the meaning of a lack of a "chemical bond." As disclosed in Applicants' specification at, for example, paragraph [0002], a "chemical bond" occurred in prior two-component materials at a point of contact. That is, the two materials chemically interacted during the injection molding process and became fused or otherwise bonded to each other at the point of contact. It was this chemical "bonding" of the two materials that provided the main retention force between the two materials. As stated in Applicants' paragraph [0034], such "chemical bonding" also included adhesive or cohesive bonding of the handle materials during the injection molding.

Thus, "chemical bonding" is a technical term that has a well understood meaning in the field of multi-component injection molding. As further evidence of what was understood to be a chemical bond by one of ordinary skill in the art, Applicants submit a chart with English translation from page 664 of a known injection molding book by Karl Oberbach entitled "Saechtling Kunststoff-Taschenbuch, 28<sup>th</sup> Edition" published by Hanser Verlag. As shown, material combinations marked with a "+" form a chemical bond while material combinations with a "-" do not form a chemical bond.

The method recited in independent claim 1 forms a two part handle without any such chemical bonding of the two different handle materials during (or even after) the injection molding process. Rather, the claimed method relies solely on a mechanical interengagement of features (e.g., recesses and projections) to provide a positive fit between the two injection molded parts, without any chemical bonding. That is, but for the interengagement of features, the two material handle parts could be separated from each other at points of contact. This allows a broader selection of materials to be used in the toothbrush because a mechanical fit is relied upon rather than a chemical bonding of component parts to achieve a rigid two-part handle structure.

As pointed out during the personal interview, WO98/35809 also does not teach a method of forming a first part of a handle and then subsequently forming by injection molding a second part of the handle including a brush head. Instead, it teaches a substantially one-piece toothbrush handle having a brush on which various ornamental features are added to the handle that extend through various openings. Thus, there is no disclosure of a first handle part connected to a subsequently formed second handle part having a brush head.

Additionally, as pointed out above, one would have recognized that the "conventional" materials taught in WO/35809 of a plastics material and an elastomer would

have resulted in a chemical bonding of the two materials at a point of contact during the injection molding.

Because of these distinctions, each and every feature of the pending method claims is not disclosed in this reference and the claims cannot be anticipated.

Nonetheless, the Examiner requests clarification to add a positive recitation of an "engaging" step that achieves the argued mechanical fit without the need of a chemical bond. Claim 1 is amended to clarify this feature. Additionally, a new set of claims (claims 37-50) is added to clarify this feature. Support for this feature can be found in original claim 8, Applicants' specification at paragraphs [0023-0026], and Figs. 1-12. Claim 1 now recites a positive interengagement step that interengages the two parts of the handle and mechanically joins them without a chemical bond. Independent claim 37 also includes this feature and further includes features of original claim 2.

WO98/35809 fails to disclose a mechanical interengagement and instead relies on a chemical bond for attachment. Accordingly, independent claims 1 and 37 and claims dependent therefrom are patentably distinct from WO98/35809. Withdrawal of the rejection is respectfully requested.

In the Office Action, claims 3-7 and 10-11 are rejected under 35 U.S.C. §103(a) over WO98/35809 in view of U.S. Patent No. 6,076,223 to Dair. This rejection is respectfully traversed.

As discussed during the February 24 personal interview, the Office Action relies on a passage in Col. 4 of Dair referring to SANTOPRENE. This, however, is an elastomer and is not the recited material styrene acrylonitrile (SAN) as claimed, which is a hard plastic. Accordingly, because Dair fails to overcome the deficiencies of WO98/35809, the subject matter of dependent claims 3-7 and 10-11 would not have been obvious from the asserted combination. Withdrawal of the rejection is respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-7, 9-16 and 37-51 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

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Respectfully submitted,



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Attachments:

Petition for Two-Month Extension of Time  
Page 664 of "*Saechtling Kunststoff-Taschenbuch*," 28 Edition

Date: March 31, 2005

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Table 5.6 Solubility of combinations of plastic materials for the two-component injection molding

Tafel 5.6 Eignung von Kunststoffkombinationen beim 2-Komponenten-Spritzgießverfahren, nach H. Bokard

| Kunststoff  | PE-HD | PE-LD | PVAC | PP | PDE + PS | PS, PS-HI | SAN | ASA | ABS | PVC | PMMA | POM | PA6 | PC | PC + ABS | PBT | PBT + PS | CA | TPA | TPC | TPO | TPE-Spez | TPE-SHS | TPU |
|-------------|-------|-------|------|----|----------|-----------|-----|-----|-----|-----|------|-----|-----|----|----------|-----|----------|----|-----|-----|-----|----------|---------|-----|
| 1 PE-HD     | +     | +     |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 2 PE-LD     | +     | +     |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 3 EVAC      | +     | +     |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 4 PP        | +     | +     |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 5 PDE + PS  |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 6 PS, PS-HI |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 7 SAN       |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 8 ASA       |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 9 ABS       |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 10 PVC      |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 11 PVAC     |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 12 PMMA     |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 13 POM      |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 14 PA6      |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 15 PA66     |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 16 PC       |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 17 PC + ABS |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 18 PC + PBT |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 19 PET      |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 20 PBT      |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 21 PPSU     |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 22 TPO + PS |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 23 CA       |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 24 TPA      |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 25 TPC      |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 26 TPO      |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 27 TPS      |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 28 TPE-Spez |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 29 TTS-SHS  |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |
| 30 TPU      |       |       |      |    |          |           |     |     |     |     |      |     |     |    |          |     |          |    |     |     |     |          |         |     |

+ : gute Verbindung, O : mögliche Verbindung, - : keine Verbindung

+ good bonding, O possible bonding, - no bonding.